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(21) International Application Number: PCT/EP95/01726 (22) International Filing Date: 8 May 1995 (08.05.95) (30) Priority Data: 9409281.4 10 May 1994 (10.05.94) GB (71)(72) Applicant and Inventor: SVEDMAN, Pal [SE/SE]; Ost- tanvag 85 B, S-216 19 Malmo (SE). (74) Agent: BALDOCK, Sharon, Claire; Boulton Wade Tennant, 27 Furnival Street, London EC4A 1PQ (GB).		(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG), ARIPO patent (KE, MW, SD, SZ, UG). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 7 December 1995 (07.12.95)
(54) Title: TRANSDERMAL DEVICE FOR ADMINISTRATION THROUGH DE-EPITHELIALIZED SKIN		
(57) Abstract A transdermal device is described suitable for delivery of a pharmaceutical to the systemic circulation through de-epithelialized skin. In its various embodiments the device includes means to prevent the attack of any protein or polypeptide active agent included therein by proteolytic enzymes which exude from the lesion, means to prevent the ingress of bacteria and other cellular debris from the lesion and means to ensure that substantially all said active agent is directed to the de-epithelialized lesion.		

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INTERNATIONAL SEARCH REPORT

In tional Application No
PCT/EP 95/01726

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61K9/70

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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☒ Further documents are listed in the continuation of box C.

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Date of the actual completion of the international search

24 October 1995

Date of mailing of the international search report

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C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CHEMICAL ABSTRACTS, vol. 117, no. 4, 27 July 1992 Columbus, Ohio, US; abstract no. 33762, MIKIO K. ET AL 'Adhesive surgical dressings' see abstract	1,3,4,6, 24,27-31
X	& PATENT ABSTRACTS OF JAPAN vol. 16 no. 315 (C-961) ,10 July 1992 & JP,A,04 090756 (TERUMO CORP) 24 March 1992, see abstract	1,3,4,6, 24,27-31
X	& DATABASE WPI Section Ch, Week 9218 Derwent Publications Ltd., London, GB; Class A04, AN 92-147850 & JP,A,04 090 756 (TERUMO CORP) , 24 March 1992 see abstract	1,3,4,6, 24,27-31
P,X	WO,A,94 22432 (REXHAM INDUSTRIES CORP.) 13 October 1994 see page 1, line 10 - line 18 see page 3, line 11 - page 4, line 15 see page 8, line 9 - line 12	1,6,8,9, 11-13
X	EP,A,0 092 200 (ZIMMERMANN E.) 26 October 1983 see page 26 - page 27; example 6	1,2, 14-19, 24,28-32
X	CHEM. PHARM. BULL., vol. 39, no. 2, 1991 TOKYO, pages 449-453, OGISO T. ET AL 'Percutaneous Absorption of Elcatonin and Hypocalcemic Effect in Rat' see page 449, column 2, paragraph 3 see page 450, column 1, paragraph 3 see page 452, column 1, paragraph 4	1,2,5, 14-19, 23-25, 38-40

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INTERNATIONAL SEARCH REPORT

In tional Application No
PCT/EP 95/01726

C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CHEMICAL ABSTRACTS, vol. 118, no. 8, 22 February 1993 Columbus, Ohio, US; abstract no. 66868, TAIICHI N. ET AL 'Topical preparations containing protease inhibitors' see abstract	1,15-19
X	& PATENT ABSTRACTS OF JAPAN vol. 16 no. 552 (C-1006) ,20 November 1992 & JP,A,04 210627 (SHISEIDO CO LTD) 31 July 1992, see abstract	1,15-19
X	& DATABASE WPI Section Ch, Week 9237 Derwent Publications Ltd., London, GB; Class A12, AN 92-304648 & JP,A,04 210 627 (SHISEIDO CO LTD) , 31 July 1992 see abstract	1,15-19
X	EP,A,0 561 330 (LIEDTKE R.) 22 September 1993 see column 5, line 18 - line 30 see column 11, line 41 - column 12, line 21	1,2, 14-19, 23, 39-42,45
A	US,A,4 605 548 (USHIYAMA K. ET AL) 12 August 1986 see column 4, line 13 - line 60 see column 5, line 15 - line 21 see column 6; example 1	1
A	THE LANCET, vol. 337, 1991 pages 1506-9, SVEDMAN P. ET AL 'Administration of antidiuretic peptide (DDAVP) by way of suction de-epithelialised skin' cited in the application see page 1507, column 1	1
	-/--	

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 95/01726

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CHEMICAL ABSTRACTS, vol. 109, no. 4, 25 July 1988 Columbus, Ohio, US; abstract no. 27633, NOBUYUKI S. ET AL 'Bandage containing a mixture of polyamino acid and antimicrobial agents' see abstract	1
A	& DATABASE WPI Section Ch, Week 8748 Derwent Publications Ltd., London, GB; Class A05, AN 87-339739 & JP,A,62 246 370 (KOKEN KK) , 27 October 1987 see abstract	1
A	--- CHEMICAL ABSTRACTS, vol. 117, no. 8, 24 August 1992 Columbus, Ohio, US; abstract no. 76537, TARO O. ET AL 'Tpoical pharmaceuticals containing calcitonin as absorption accelerator' see abstract	1
A	& PATENT ABSTRACTS OF JAPAN vol. 16 no. 283 (C-955) ,24 June 1992 & JP,A,04 074133 (TARO O ET AL) 9 March 1992, see abstract	1
A	& DATABASE WPI Section Ch, Week 9216 Derwent Publications Ltd., London, GB; Class B01, AN 92-129013 & JP,A,04 074 133 (TOYO JOZO KK) , 9 March 1992 see abstract	1
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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 95/01726

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CHEMICAL ABSTRACTS, vol. 119, no. 10, 6 September 1993 Columbus, Ohio, US; abstract no. 103409, TATSUHIKO K. ET AL 'Wound dressing containing antimicrobial agents' see abstract	1
A	& DATABASE WPI Section Ch, Week 9325 Derwent Publications Ltd., London, GB; Class A05, AN 93-199770 & JP,A,05 123 354 (MITSUBISHI KASEI CORP.) , 21 May 1993 see abstract	1
A	& PATENT ABSTRACTS OF JAPAN vol. 17 no. 482 (C-1105) ,2 September 1993 & JP,A,05 123354 (MITSUBISHI KASEI CORP.) 21 May 1993, see abstract -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 95/01726

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO-A-9422432	13-10-94	AU-B- 6491494	24-10-94
EP-A-92200	26-10-83	DE-A- 3214337	27-10-83
		DE-A- 3378562	05-01-89
		US-A- 4606337	19-08-86
		US-A- 4683142	28-07-87
EP-A-561330	22-09-93	DE-A- 4208552	23-09-93
		JP-A- 6316530	15-11-94
US-A-4605548	12-08-86	NONE	